

**Supplemental Specification
2005 Standard Specification Book**

SECTION 02891

TRAFFIC SIGNS

Delete Section 02891 in its entirety and replace with the following:

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Materials and procedures for installing traffic signs.

1.2 RELATED SECTIONS

- A. Section 02317: Structural Excavation
- B. Section 03055: Portland Cement Concrete
- C. Section 03211: Reinforcing Steel and Welded Wire
- D. Section 05120: Structural Steel
- E. Section 06055: Timber and Timber Treatment

1.3 REFERENCES

- A. ASTM A 153: Zinc Coating (Hot-Dip) on Iron and Steel Hardware
- B. ASTM A 314: Stainless Steel Billets and Bars for Forging
- C. ASTM A 500: Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- D. ASTM A 513: Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing
- E. ASTM A 653: Steel, Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by Hot-Dip Process

- F. ASTM A 1011: Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability
- G. ASTM B 209: Aluminum and Aluminum-Alloy Sheet and Plate
- H. American Plywood Association (APA) Product Standard
- I. Code of Federal Regulations (CFR)

1.4 TRAFFIC SIGN COMPONENTS

- A. Substrate: The base material, usually plywood or aluminum, upon which the background sheeting is attached.
- B. Sheeting: The retroreflective or non-reflective material that comprises the background, legend (word messages and symbols), and border.
- C. Sheeting Components: The matched component products required for the manufacture of highway signs will consist of the sheeting, cutout letters and borders, adhesives, inks and overlay films. Failure of the sheeting inks or overlay films, provided, sold, or recommended for use, will constitute a failure of the entire sign and be replaced under manufacturer's warranty replacement obligations. All components and warranties will be compatible with substrates used by UDOT, including 90/90 HDO plywood and Aluminum ASTM B 209 5052 - H 38 or 6061-T6.
- D. Panel: Assembly of substrate and attached sheeting. Several panels may be necessary to complete one sign. Panel types are:
 - 1. Type
 - a. A: Retroreflective sheeting on sheet aluminum.
 - b. P: Retroreflective sheeting on plywood.
 - 2. Legend:
 - a. 1: With non-reflective legend, symbols, and borders.
 - b. 2: With retroreflective legend and border.
- E. Sign: A complete assembly comprised of post, frame, and panel.
- F. Auxiliary Sign: A sign including frame, if required, attached and supplemental to a complete sign assembly.
- G. Panel replacement: Removing the existing panel and attaching a new panel to the frame.
- H. Panel Overlay: Attaching new panels to all or part of an existing panel.

- I. Size: Horizontal x vertical

1.5 SIGN CODES

- A. New Sign: N
- B. Auxiliary Sign: Aux
- C. Relocation: R
- D. Removal: X
- E. Panel Replacement: PR
- F. Panel Overlay: PO

1.6 SUBMITTALS

- A. Submit three sets of drawings for overhead structures for prefabrication approval. Allow 14 calendar days for approval.
- B. Manufacturer's Product Data and Specifications.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Fabricate signs and posts as specified per SN Series Standard Drawings.
- B. Substrate: 0.080 inch thick. ASTM B 209 alloy 6061-T6, or 5052-H38.
- C. Plywood as specified below and which meets the APA product standard 1 PSI-83, Group 1, $\frac{5}{8}$ inch thick.
 - 1. 90/90, high density BB exterior (Douglas Fir) B Grade.
 - 2. Plugged-core (Douglas Fir) with $\frac{1}{2}$ inch maximum gaps.
 - 3. Use acrylic laminate that is compatible with the retroreflective sheeting adhesive, and that does not require the removal of the release agents before applying the sheeting.
- D. Posts:
 - 1. Timber Sign Post (P1)
 - a. Refer to Section 06055

2. Tubular Steel Sign Post (P2)
 - a. Post: ASTM A 513
 - b. Finish: Galvanize ASTM A 653
 - c. Shape: As shown, wall thickness 0.080
 - d. Color: Powder coated as required
 3. Square Steel Sign Post (P3)
 - a. Post: ASTM A 1011 Grade 50
 - b. Finish: Galvanize ASTM A 653
 - c. Shape: 12 gauge or 10 gauge steel
 - d. Color: Powder coated as required
 4. Slip Base Tubular Steel Sign Post (P4)
 - a. Post ASTM A 500 Grade C; 46,000 psi minimum yield
 - b. Finish: Galvanize ASTM A 153
 - c. Shape: As shown; schedule 80
 - d. Color: Powder coated as required
 5. Steel Sign Post (P5)
 - a. Refer to Section 05120
- E. Retroreflective Sheeting:
1. Meet Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects FP-03.
 2. Conform to 23CFR655 Subpart F for Standard Highway colors for Ordinary and Fluorescent Sheeting.
 3. Meet or exceed the minimum requirements of ASTM Type IX.
- F. Non-reflective Sheeting: As specified and in accordance with the recommendation of the retroreflective sheeting manufacturer.
- G. Fasteners: As specified. Meet ASTM A 314, Class 304, 18-8, Stainless Steel.
- H. Foundation
1. Concrete: Class A (AE). Refer to Section 03055.
 2. Reinforcing steel: Refer to Section 03211.
 3. Anchor bolts: Refer to Section 05120.
- I. Structural Steel: Structural Steel frame. Refer to Section 05120.
- J. Temporary covering: Opaque material.

PART 3 EXECUTION

3.1 PREPARATION

- A. Coordinate utility location.

- B. Excavate: Refer to Section 02317.
- C. Install traffic control devices before work activities begin.

3.2 INSTALLATION - GENERAL

- A. Do not reverse screen sign larger than 7 ft²/color.
- B. Do not remove a sign that is being replaced until the new sign is placed and uncovered.
- C. Compact backfill to a density equal to surrounding materials.
- D. Establish proper elevation and orientation of all signs and structures, and determine proper sign post lengths as dictated by construction slopes.
- E. Cover signs that require temporary covering with an opaque material. Secure at the rear of the sign so that the sign is not damaged. Maintain covering until covering or sign is removed.
- F. Construct sign post foundations with concrete conforming to indicated dimensions.

3.3 RELOCATING EXISTING SIGN

- A. Retrofit as required to meet current standards.
- B. Provide new posts and accessories as required.
- C. Remove foundations to a minimum of 6 inches below the ground line, and backfill.

3.4 REMOVING EXISTING SIGN

- A. Remove foundations to a minimum of 6 inches below the ground line and backfill.

END OF SECTION